Complete Summary

GUIDELINE TITLE

Allergies: occupational/environmental.

BIBLIOGRAPHIC SOURCE(S)

Allergies: occupational/environmental. Philadelphia (PA): Intracorp; 2004. Various p.

GUIDELINE STATUS

This is the current release of the guideline.

All Intracorp guidelines are reviewed annually and updated as necessary, but no less frequently than every 2 years. This guideline is effective from July 1, 2004 to July 1, 2006.

COMPLETE SUMMARY CONTENT

SCOPE
METHODOLOGY - including Rating Scheme and Cost Analysis
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EVIDENCE SUPPORTING THE RECOMMENDATIONS
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INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES
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SCOPE

DISEASE/CONDITION(S)

Occupational/environmental allergies, including

- Occupational asthma
- Latex allergy
- Hypersensitivity pneumonitis

GUIDELINE CATEGORY

Diagnosis
Evaluation

Management
Treatment

CLINICAL SPECIALTY

Allergy and Immunology
Emergency Medicine
Family Practice
Internal Medicine
Pulmonary Medicine

INTENDED USERS

Allied Health Personnel
Health Care Providers
Health Plans
Hospitals
Managed Care Organizations
Utilization Management

GUIDELINE OBJECTIVE(S)

To present recommendations for the diagnosis, treatment, and management of occupational/environmental allergies that will assist medical management leaders to make appropriate benefit coverage determinations

TARGET POPULATION

Individuals with occupational/environmental allergies

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis/Evaluation

1. Physical examination and assessment of signs and symptoms
2. Diagnostic tests
    - Occupational asthma and latex allergy:
        - Skin-prick test
        - Patch testing
        - AlaSTAT
        - Basophil histamine release test
        - "Use test" (latex challenge)
        - Radioallergosorbent (RAST) test
        - Bronchoprovocation testing
    - Hypersensitivity pneumonitis
        - Complete blood count (CBC)
        - Pulmonary function tests
        - Pulse oximetry ("pulse ox")
        - Chest x-ray (CXR)
        - Bronchoalveolar lavage
        - Open lung biopsy

- Transbronchial biopsy

Treatment/Management

1. Medication
    - Beta sympathomimetics
    - Corticosteroids
    - Anticholinergics
    - Cromolyn sodium
2. Eliminating or minimizing exposure to allergens
    - Transferring the patient to a different area
    - Use of ventilation
    - Use of respirator
3. Latex allergy
    - Avoiding reexposure to latex
    - Medication: Benadryl, epinephrine, steroids (Solumedrol, Decadron)
    - Anaphylactic shock treatment: Intravenous hydration, pressor drugs, epinephrine, airway intubation
    - Powder-free gloves, vinyl gloves/cotton liners/barrier creams
    - Medical Alert bracelet
    - Self-injectable epinephrine device (in high risk)
4. Hypersensitivity pneumonitis
    - Avoiding or eliminating exposure to implicated antigen
    - Supportive therapy
    - Corticosteroids (in severe cases)

MAJOR OUTCOMES CONSIDERED

Sensitivity and specificity of diagnostic tests

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Searches were performed of the following resources: reviews by independent medical technology assessment vendors (such as the Cochrane Library, HAYES); PubMed; MD Consult; the Centers for Disease Control and Prevention (CDC); the U.S. Food and Drug Administration (FDA); professional society position statements and recommended guidelines; peer reviewed medical and technology publications and journals; medical journals by specialty; National Library of Medicine; Agency for Healthcare Research and Quality; Centers for Medicare and Medicaid Services; and Federal and State Jurisdictional mandates.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Not Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not stated

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus (Delphi)

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

A draft Clinical Resource Tool (CRT or guideline) is prepared by a primary researcher and presented to the Medical Technology Assessment Committee or the Intracorp Guideline Quality Committee, dependent upon guideline product type.

The Medical Technology Assessment Committee is the governing body for the assessment of emerging and evolving technology. This Committee is comprised of a Medical Technology Assessment Medical Director, the Benefit and Coverage Medical Director, CIGNA Pharmacy, physicians from across the enterprise, the Clinical Resource Unit staff, Legal Department, Operations, and Quality. The Intracorp Guideline Quality Committee is similarly staffed by Senior and Associate Disability Medical Directors.

Revisions are suggested and considered. A vote is taken for acceptance or denial of the CRT.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Comparison with Guidelines from Other Groups
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not stated

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Diagnostic Confirmation

Subjective Findings

- Occupational asthma
    - Episodic wheezing/coughing/mucus production
    - Episodic shortness of breath
    - Asthma can be initiated or provoked by allergens in the workplace environment.
    - Symptom onset can be either immediate (start within minutes and last for up to 2 hours), or non-immediate (can start hours later and last for many hours).
    - Symptoms usually abate or disappear when removed from the workplace, but may reoccur with repeated exposures.
- Latex allergy
    - Atopy, asthma, urticaria, eczema, rhinitis, angioedema, other anaphylactic reactions
    - Frequent allergies to cross-reactive substances: avocado, chestnut, a variety of fruits, latex products, various types of clothing
    - Atopic history
    - Report of latex exposure, type of latex, duration of exposure
- Hypersensitivity pneumonitis
    - Symptoms temporally related to exposure to an environmental antigen (such as air conditioning systems, automobiles, furnace and room humidifiers, or cold steamers)
    - Acute form: results from intermittent exposure; symptoms develop 4 to 6 hours after exposure and resolve spontaneously in 12 to 24 hours, but exacerbation and worsening of symptoms can occur when reexposure is frequent.
        - Chills
        - Fever (can be very high) that gradually resolves
        - Harsh nonproductive cough
        - Shortness of breath
        - Malaise, myalgia, headache, and chest tightness
    - Subacute form: less common, but occurs after chronic exposure
        - Productive cough
        - Shortness of breath
        - Easily fatigued

- Weight loss

Objective Findings

- Occupational asthma
  - Wheezes on chest auscultation
  - Bronchodilator response on pulmonary function tests
  - Positive asthma-provoking test (e.g., methacholine challenge)
  - Challenge with specific agent (this is rarely done in routine practice)
  - Serial peak flow testing
  - Skin test/serologic test
- Latex Allergy
  - Hives
  - Urticaria
  - Rhinitis
  - Wheezing
  - Anaphylaxis with reexposure
  - Contact dermatitis: typically dry, crusted lesions develop later, most common hypersensitivity reaction to latex
- Hypersensitivity pneumonitis
  - Dyspnea
  - Occasional cyanosis
  - Fine bibasilar rales on auscultation
  - Chronic form: recurrent intense or prolonged low level exposure.
    - Disabling respiratory symptoms due to irreversible physiological changes (tachypnea, bibasilar crackles, wheezing, pulmonary hypertension, and cor pulmonale)
    - Nail clubbing

Diagnostic Tests

- OCCUPATIONAL ASTHMA AND LATEX ALLERGY
  - Skin-prick test: low sensitivity/fair specificity; good tests for patients at high suspicion/high risk of latex allergy. This is the most frequently performed test.
  - Patch testing: may be done to confirm a type 4 allergy such as contact dermatitis; however, no standardized latex allergenic extract has been approved for skin testing.
  - AlaSTAT: higher sensitivity
  - Basophil histamine release test: higher sensitivity but not readily available
  - "Use test": (latex challenge)
  - Radioallergosorbent tests (RAST): it is the position of the American Academy of Allergy, Asthma, and Immunology that RAST is preferable to skin testing ONLY when there is dermatographia or widespread skin disease such as psoriasis.
  - Bronchoprovocation testing (e.g., methacholine challenge): no standard protocol or latex solution is available for this type of challenge.
- HYPERSENSITIVITY PNEUMONITIS
  - Complete blood count (CBC) (often shows leukocytosis)
  - Pulmonary function tests (PFTs)

        - Reveals airway trapping with early normal airway resistance, then restriction, hypoxemia; these should improve within hours to days in acute cases.
        - In chronic states, PFTs indicate chronic obstructive disease as a result of interstitial fibrosis; decreased vital capacity and lung volume without airway obstruction
        - Lung diffusion capacity is often decreased
    - Pulse Oximetry ("pulse ox")
        - Exercise-induced hypoxemia
    - Chest x-ray (CXR)
        - Can be normal early, but commonly reveals bilateral interstitial and alveolar nodular infiltrates in patchy or homogenous distribution
        - Apices are often clear
        - In later stages, CXR may show diffuse reticulonodular infiltrates and fibrosis; honeycombed appearance may be seen.
        - Chronic disease often has appearance of lung fibrosis and/or emphysema.
    - Bronchoalveolar lavage: may show high ratio of T-suppressor lymphocytes; sometimes used if unable to confirm the diagnosis
    - Open lung biopsy is the gold standard test if there is still doubt of diagnosis after conventional testing.
    - Transbronchial biopsy (very rarely performed; has poor yield)

Differential Diagnosis

- Reactive airway disease (generally considered variant of occupational asthma with specific history)
- Collagen-vascular disease
- Idiopathic pulmonary fibrosis
- Industrial bronchitis
- Allergic asthma
- Viral syndromes
- Sarcoidosis
- Berylliosis
- Eosinophilic pneumonia

<u>Treatment Options</u>

- Standard medical treatment for allergic exposures
    - Beta sympathomimetics
    - Corticosteroids (either oral or inhaled)
    - Anticholinergics (inhaled)
    - Cromolyn sodium (inhaled)
- Eliminate or minimize exposure to allergen(s)
    - Transfer to a different area will resolve symptoms in minor exposures
    - Use of ventilation
    - Use of respirator: twin cartridge helmets or self-contained breathing apparatuses
- For latex allergy
    - Avoid reexposure to latex, including gloves, tourniquets, and catheters.

        - Diphenhydramine (Benadryl)
        - Epinephrine
        - Steroids (methylprednisolone sodium succinate [Solumedrol] or dexamethasone sodium phosphate [Decadron])
        - Treatment for anaphylaxis/anaphylactic shock: intravenous hydration, pressor drugs, epinephrine, airway intubation
        - Powder-free gloves in whole work environment
        - Vinyl gloves/cotton liners/barrier creams
        - Encourage wearing a Medic Alert bracelet
        - Self-injectable epinephrine device (if high risk)
    - For hypersensitivity pneumonitis
        - Avoid or eliminate exposure to implicated antigen.
        - Supportive therapy
        - Corticosteroids in severe cases
    - (Note: state jurisdictional guidelines may supersede the recommendations of this guideline.)

Duration of Medical Treatment

- Occupational asthma
    - Variable response to treatment; potentially treat for life or for as long as the worker is exposed to the allergen (treatment for life is common as disease can generalize to chronic pulmonary problems with nonspecific stimuli)
- Latex allergy:
    - Depends on symptoms, work type, ability to make latex-free environment
    - Contact dermatitis: days to weeks depending on severity; however, may need continuing care depending on work environment.
    - Other skin manifestations: approximately 1 week
    - Pulmonary manifestations: days (presuming no reexposure)
    - Anaphylaxis: days to weeks
- Hypersensitivity
    - Mild: 3 months
    - Moderate: 6 months
    - Severe: 1 year to life

Additional provider information regarding primary care visit schedules, referral options, frequency and duration of specialty care, and durable medical equipment is provided in the original guideline document.

The original guideline document also provides a list of red flags that may affect disability duration, and return to work goals, including

- Resolving symptoms of latex allergy and removal of exposure
- Resolving occupational exposure and removal of causative agent
- After irreversible airway changes (second degree hypersensitivity pneumonitis)

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate diagnosis, treatment, and management of occupational/environmental allergies that assist medical management leaders in making appropriate benefit coverage determinations

POTENTIAL HARMS

Not stated

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Allergies: occupational/environmental. Philadelphia (PA): Intracorp; 2004. Various p.

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1997 (revised 2004)

GUIDELINE DEVELOPER(S)

Intracorp - Public For Profit Organization

SOURCE(S) OF FUNDING

Intracorp

GUIDELINE COMMITTEE

CIGNA Clinical Resources Unit (CRU)
Intracorp Disability Clinical Advisory Team (DCAT)
Medical Technology Assessment Committee (MTAC)
Intracorp Guideline Quality Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

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GUIDELINE AVAILABILITY

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AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Policies and procedures. Medical Technology Assessment Committee Review Process. Philadelphia (PA): Intracorp; 2004. 4 p.

Licensing information and pricing: Available from Intracorp, 1601 Chestnut Street, TL-09C, Philadelphia, PA 19192; e-mail: lbowman@mail.intracorp.com.

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on November 24, 2004. The information was verified by the guideline developer on December 8, 2004.

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